

Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Listing of Claims:

1. (Previously Presented) A method for accessing files in a file server comprising:
 - receiving a file request in connection with a file;
 - performing one or more first operations on a first file system in response to the file request, wherein the one or more first file operations are performed on a copy of the file contained in the first file system;
 - creating a copy of the file on the second file system having a filename the same as the file when the file has not been copied to a second file system different from the first file system, and creating a copy of the file on the second file system having a filename different from the file when the file has been copied to the second file system;
 - selectively performing one or more second operations on the second file system in response to the file request when the file request includes a write-type operation on the file and is queued up in a list of operations to be performed on the second file system, wherein the list of operations comprise operations from previous file requests, wherein the one or more first operations are performed asynchronously with respect to the one or more second operations, and wherein the one or more second operations are performed on the copy of the file contained in the second file system; and

accessing files on the first file system by a first client system only via the file server and accessing files on the second file system directly by a second client system via a block interface absent of the file server, wherein a format of the first file system is different from a format of the second file system.

2. (Original) The method of claim 1 wherein each file contained in the second file system comprises sequentially allocated blocks.

3-4. (Canceled)

5. (Previously Presented) The method of claim 1 wherein each file contained in the second file system comprises one or more blocks of physical storage allocated in sequential order.

6. (Canceled)

7. (Previously Presented) The method of claim 1 wherein the step of performing one or more second operations is performed only after completing the step of performing one or more first operations.

8. (Canceled)

9. (Original) The method of claim 1 wherein the step of performing one or more second operations is performed if the file request is a file close operation.

10. (Previously Presented) A method for accessing files on a file server comprising:

receiving a request for a first operation on a file, the request including a file reference;

performing the first operation on a first file in a first file system, the first file being identified by the file reference;

storing information representative of the first operation and of the file reference in an entry of a queue;

creating a copy of the file on the second file system having a filename the same as the file when the file has not been copied to a second file system different from the first file system, and creating a copy of the file on the second file system having a filename different from the file when the file has been copied to the second file system; and

selectively performing one or more second operations on the second file system in response to the file request when the file request includes a write-type operation on the file and is queued up in a list of operations to be performed on the second file system, wherein the list of operations comprise operations from previous file requests, wherein the one or more first operations are performed asynchronously with respect to the one or more second operations, and wherein the one or more second operations are performed on the copy of the file contained in the second file system; and

accessing files on the first file system by a first client system only via the file server and accessing files on the second file system directly by a second client

system via a block interface absent of the file server, wherein a format of the first file system is different from a format of the second file system.

11. (Original) The method of claim 10 wherein the second operation is performed if the operation represented by the information in the entry is a write-type operation.

12. (Original) The method of claim 11 wherein the second operation that is performed is the same as the first operation.

13. (Original) The method of claim 10 wherein the second operation is a copy operation to produce the second file by making a copy of the first file, if the operation represented by the information in the entry is a file close operation.

14. (Original) The method of claim 13, wherein the copy operation produces multiple versions of the first file, in the second file system.

15. (Original) The method of claim 14 wherein files in the second file system comprise sequentially allocated blocks of a physical storage medium

16. (Canceled)

17. (Previously Presented) A method for operating a file server comprising:
receiving a file request;

communicating one or more first file operations to a first file system to perform the file request on a file in the first file system, the file being identified in the file request;

creating a copy of the file on the second file system having a filename the same as the file when the file has not been copied to a second file system different from the first file system, and creating a copy of the file on the second file system having a filename different from the file when the file has been copied to the second file system;

determining if the file request is a write-type of request, when a determination is made that the file request is a write-type of request, communicating one or more second file operations to the second file system to perform the file request on a file in the second file system after the file request on the first file system has completed; and

accessing files on the first file system by a first client system only via the file server and accessing files on the second file system directly by a second client system via a block interface absent of the file server, wherein a format of the first file system is different from a format of the second file system and wherein the one or more first file operations are performed asynchronously with respect to the one or more second file operations.

18. (Canceled)

19. (Previously Presented) The method of claim 17 wherein the format of the first file system is not a publicly known format and the format of the second file system is a publicly known format.

20. (Previously Presented) A method for accessing files in a file server comprising:

- providing a first file system and a second file system, the second file system comprising files contained in the first file system, the first file system having a file system format that is different from a file system format of the second file system;

- receiving a file request;

- performing one or more first operations on a file stored in the first file system;

- creating a copy of the file having the same filename as the file when the file has not been copied to the second file system when the file request is a close file operation, and creating a copy of the file having a different filename from the file when the file has been copied to the second file system, the copy being stored in the second file system, and

- accessing files on the first file system by a first client system only via the file server and accessing files on the second file system directly by a second client system via a block interface absent of the file server, wherein the one or more first file operations are performed asynchronously with respect to the one or more second file operations.

21. (Original) The method of claim 20 wherein if a previous copy of the file in the first file system is stored in the second file system, then the step of producing a

copy includes preserving the previous copy, whereby multiple copies of the file in the first file system are accumulated in the second file system.

22. (Original) The method of claim 20 wherein the file system format of the first file system is not a publicly known format and the file system format of the second file system is a publicly known format.

23. (Currently Amended) A file server comprising:
a data processing component;
a communication component configured to receive file requests; and
a physical storage component in data communication with the data processing component comprising a first physical storage portion and a second physical storage portion, wherein the first physical storage portion contains files organized in a first file system, and the second physical storage portion contains files organized in a second file system, the first file system having a format different from the second file system, wherein the second file system comprises one or more files contained in the first file system, the data processing component comprising first file system software for accessing the first file system and second file system software for accessing the second file system,

the data processing component comprising first file system software for accessing the first file system and second file system software for accessing the second file system,

the data processing component ~~being configured to perform~~ performing first file requests in connection with a file made on the first file system,

the data processing component ~~being configured to create~~creating a copy of the file on a second file system having a filename the same as the file when the file has not been copied to the second file system different from the first file system, ~~to create~~creating a copy of the file on the second file system having a filename different from the file when the file has been copied to the second file system different from the first file system, and ~~to perform~~performing at least some of the first file requests on the second file system; and

wherein a first client system accesses files on the first file system only via the file server and a second client system accesses files on the second file system directly via a block interface absent of the file server, wherein one or more first file operations on the first file system are performed asynchronously with respect to one or more second file operations on the second file system.

24. (Original) The file server of claim 23 wherein files stored in the second file system include multiple versions of one or more files stored in the first file system.

25. (Original) The file server of claim 24 wherein each file stored in the second file system comprises blocks of a physical storage device that are sequential in allocation order.

26. (Original) The file server of claim 23 wherein the first file system is not a publicly known format and the second file system is a publicly known format.

27. (Original) The file server of claim 23 wherein file requests performed on the second file system are write-type file requests.

28. (Original) A network attached storage (NAS) gateway configured in accordance with the file server of claim 23.

29. (Original) The NAS gateway of claim 28 further comprising a storage area network (SAN), the physical storage component comprising a portion of the SAN, the NAS gateway configured to communicate over the SAN to access the physical storage component.

30. (Original) The NAS gateway of claim 28 further comprising an interface to the second file system configured for communication with a SAN, wherein access to the second file system can be made via the SAN.

31. (Original) The NAS gateway of claim 28 further comprising an interface configured for communication with a SAN, wherein some of the first file requests performed on the second file system are made via the SAN.

32. (Original) The NAS gateway of claim 31 wherein an application server can access the second file system via the SAN.

33. (Previously Presented) An application server comprising:
a data processing component for executing one or more applications;

file access software configured to access a first file system and a second file system that is different from the first file system;

a physical storage component comprising first physical storage for files contained in the first file system, the physical storage component further comprising second physical storage for files contained in the second file system;

wherein the file access software receives file requests in connection with a file from the one or more applications and performs the file requests on the first file system and selectively performs the file requests on the second file system, creating a copy of the file on the second file system having a filename the same as the file when the file has not been copied to a second file system different from the first file system, and creates a copy of the file on the second file system having a filename different from the file when the file has been copied to the second file system and

wherein a first client system accesses files on the first file system only via the file server and a second client system accesses files on the second file system directly via a block interface absent of the file server, wherein a format of the first file system is different from a format of the second file system and wherein one or more first file operations on the first file system are performed asynchronously with respect to one or more second file operations on the second file system.

34. (Original) The server of claim 33 wherein the physical storage component is provided via a SAN.

35. (Original) The server of claim 33 wherein the file requests are performed on the second file system for write-type file requests.

36. (Original) The server of claim 33 wherein the write-type file requests include a modification to a file, a deletion of a file, creation of a file, changing one or more file attributes, modification of one or more directory attributes, creation of a directory, and deletion of a directory.

37. (Previously Presented) A file server comprising:

means for receiving file requests;

means for performing the file requests on a first file system, including means for communicating with the first file system; and

means for selectively performing the file requests on a second file system, including means for communicating with the second file system, the second file system having a format different from the first file system,

means for creating a copy of the file on the second file system having a filename the same as the file wherein when a file associated with a first file request on the first file system has not been copied to the second file system;

means for creating a copy of the file on the second file system having a filename different from the file when the file has been copied to the second file system; and

means for accessing files on the first file system by a first client system only via the file server and accessing files on the second file system directly by a second client system via a block interface absent of the file server, wherein one or more first file operations on the first file system are performed asynchronously with respect to one or more second file operations on the second file system.

38. (Original) The file server of claim 37 wherein the means for selectively performing the file requests includes performing the file requests that are write-type file requests.

39. (Original) An application server comprising data processing means for execution one or more applications, the applications producing one or more file requests; and file server means according to claim 37 for performing file requests received from the one or more applications.

40. (Previously Presented) The method of claim I wherein a file copy bit for each file in the said first file system on whether copy was created on the second file system is kept and is used to determine whether the file has been copied to the second file system or not.